

WHAT IS CLAIMED IS:

1. A bonded anisotropic conductive film, comprising:

a thermal set plastic material hardened after being raised to a first temperature; and

5 a plurality of conductive particles within the plastic material, wherein each conductive particle has a conductive bead, a bonding layer and a flux layer, the bonding layer covers the surface of the conductive bead and the flux layer covers the bonding layer, and the bonding layer melts at a second temperature and the second temperature is higher than the first temperature.

10 2. The bonded anisotropic conductive film of claim 1, wherein material forming the conductive bead includes gold.

3. The bonded anisotropic conductive film of claim 1, wherein material forming the bonding layer includes lead-tin solder.

4. A bonded anisotropic conductive film, comprising:

15 a plastic material; and

a plurality of conductive particles within the plastic material, wherein each conductive particle has a conductive bead, a bonding layer and a flux layer, the bonding layer covers the surface of the conductive bead and the flux layer covers the bonding layer.

20 5. The bonded anisotropic conductive film of claim 4, wherein the plastic material includes a thermal set material.

6. The bonded anisotropic conductive film of claim 4, wherein material forming the conductive bead includes gold.

7. The bonded anisotropic conductive film of claim 4, wherein material forming the bonding layer includes lead-tin solder.

8. The bonded anisotropic conductive film of claim 4, wherein the plastic material hardens after being raised to a first temperature and the bonding layer melts at a second
5 temperature such that the second temperature is higher than the first temperature.

9. A bonded anisotropic conductive film, comprising:

a plastic material; and

a plurality of conductive particles within the plastic material, wherein each
conductive particle has a bonding layer and a flux layer, the bonding layer forms a
10 spherical structure and the flux layer covers the surface of the bonding layer.

10. The bonded anisotropic conductive film of claim 9, wherein the plastic material includes a thermal set material.

11. The bonded anisotropic conductive film of claim 9, wherein the bonding layer includes a conductive bead.

15 12. The bonded anisotropic conductive film of claim 11, wherein material forming the conductive bead includes gold.

13. The bonded anisotropic conductive film of claim 9, wherein material forming the bonding layer includes lead-tin solder.

20 14. The bonded anisotropic conductive film of claim 9, wherein the plastic material hardens after being raised to a first temperature and the bonding layer melts at a second temperature such that the second temperature is higher than the first temperature.

15. A flip chip package having a bonded anisotropic conductive film structure in any one of the claims from 4 to 8, comprising:

a silicon chip, a carrier and a bonded anisotropic conductive film, wherein the silicon chip has a plurality of first contact points thereon and the carrier has a plurality of contact points thereon that correspond in position to the first contact points, the bonded anisotropic conductive film is inserted between the silicon chip and the carrier such that

5 each pair of corresponding first contact point and second contact point form a common metallic bond through the bonding layer of conductive particles within the bonded anisotropic conductive film.

16. The flip chip package of claim 15, wherein material forming the conductive bead includes gold.

10 17. The flip chip package of claim 15, wherein material forming the bonding layer includes lead-tin solder.